

Chapter 21A.14
DEVELOPMENT STANDARDS - DESIGN REQUIREMENTS

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21A.14.010 Purpose. The purpose of this chapter is to improve the quality of development by providing building and site design standards that:

- A. Reduce the visual impact of large residential buildings from adjacent streets and properties;
 - B. Enhance the aesthetic character of large residential buildings;
 - C. Contain sufficient flexibility of standards to encourage creative and innovative site and building design;
 - D. Meet the on-site recreation needs of project residents;
 - E. Enhance aesthetics and environmental protection through site design;
- and

F. Allow for continued or adaptive reuse of historic resources while preserving their historic and architectural integrity. (Ord. 11621 § 45, 1994: 10870 § 361, 1993).

21A.14.020 General layout standards. For residential developments in the UR and R zones:

- A. The maximum length of blocks shall be 1,320 feet; and
- B. Except for corner lots, lots for single detached dwellings shall not have street frontage along two sides unless one of said streets is a neighborhood collector street or an arterial street. (Ord. 10870 § 362, 1993).

21A.14.030 Lot segregations - Zero lot line development. In any UR or R zone or in the NB zone on property designated commercial outside of center in the urban area, interior setbacks may be modified during subdivision or short subdivision review as follows:

A. If a building is proposed to be located within a normally required interior setback:

1. An easement shall be provided on the abutting lot of the subdivision that is wide enough to ensure a 10-foot separation between the walls of structures on adjoining lots, except as provided for common wall construction;

2. The easement area shall be free of permanent structures and other obstructions that would prevent normal repair and maintenance of the structure's exterior;

3. Buildings utilizing reduced setbacks shall not have doors that open directly onto the private yard areas of abutting property. Windows in such buildings shall not be oriented toward such private yard areas unless they consist of materials such as glass block, textured glass, or other opaque materials, and shall not be capable of being opened, except for clerestory-style windows or skylights; and

4. The final plat or short plat shall show the approximate location of buildings proposed to be placed in a standard setback area.

B. In the UR or R zones, setbacks on existing individual lots may be modified provided that the standards set forth in subsection A.1 of this section are met. (Ord. 12522 § 5, 1996: Ord. 11978 § 6, 1995: Ord. 10870 § 363, 1993).

21A.14.040 Lot segregations - Clustered development. When residential lot clustering is proposed, the following provisions shall be met:

A. Any open space resulting from lot clustering shall not be altered or disturbed except as specified on recorded documents creating the open space. Such open spaces may be retained under ownership by the subdivider, conveyed to residents of the development, or conveyed to a third party. When access to the open space is provided, the access shall be located in a separate tract ;

B. In the RA zone:

1. No more than eight lots of less than 2.5 acres shall be allowed in a cluster;

2. No more than eight lots of less than 2.5 acres shall be served by a single cul-de-sac street;

3. Clusters containing two or more lots of less than 2.5 acres, whether in the same or adjacent developments, shall be separated from similar clusters by at least 120 feet;

4. The overall amount, and the individual degree of clustering shall be limited to a level that can be adequately served by rural facilities and services, including, but not limited to, on-site sewage disposal systems and rural roadways; and

C. In the R-1 zone, open space tracts created by clustering required by K.C.C. 21A.12.030 shall be located and configured to create urban separators and greenbelts as required by the comprehensive plan, community plans, or local or subarea plans or open space functional plans, to connect and increase protective buffers for environmentally sensitive areas as defined in K.C.C. 21A.06.1065, to connect and protect wildlife habitat corridors designated by the comprehensive plan, and to connect existing or planned public parks or trails. King County may require open space tracts created under this subsection to be dedicated to an appropriate managing public agency or qualifying private entity such as a nature conservancy. (Ord. 13022 § 19, 1998: Ord. 12822 § 8, 1997: Ord. 11621 § 47, 1994: 10870 § 364, 1993).

21A.14.050 Lot segregations - UR zone reserve tract. Subdivision of UR zoned property of 10 or more acres shall be required to be clustered and a reserve tract shall be created for future development pursuant to the following provisions:

A. The reserve tract shall be no less than 75 percent of the net developable area of the property to be subdivided.

B. The reserve tract shall be configured to contain lands with topography and natural features that allow future conversion of the reserve tract to residential development at urban densities.

C. The reserve tract may contain a single dwelling unit, provided:

1. The unit was included in the overall density calculations for the original subdivision creating the reserve tract, and

2. The unit was noted on the face of the original subdivision (plat or short plat).

D. The reserve tract shall not be altered or disturbed except as specified on the face of the original subdivision (plat or short plat).

E. The reserve tract may be retained under the ownership of the subdivider, conveyed to residents of the subdivisions, or conveyed to a third party. Regardless of ownership of the reserve tract, all restrictions relative to the reserve tract shall apply.

F. The reserve tract shall not be used to satisfy the recreation space requirement of the original subdivision.

G. The layout of the lots and roadways created in the original subdivision shall facilitate future development of the reserve tract.

H. The lots created in the original subdivision shall be of a sufficient area to comply with on-site sewage disposal requirements, if public sewers are not available.

I. The reserve tract shall not be eligible for further subdivision until such time that reclassification of the reserve tract occurs pursuant to the community plan area zoning process outlined in K.C.C. 20.08.030.

J. Any proposed subsequent development on the reserve tract shall be governed by the development standards in effect at the time of such development. (Ord. 10870 § 365, 1993).

21A.14.060 Townhouse development. In the R-1 through R-8 zones and in the NB zone on property designated commercial outside of center in the urban area, a building that contains a grouping of attached townhouse units shall not exceed a 200-foot maximum length without a separation of at least 10 feet from other groupings or rows of townhouses. (Ord. 12522 § 6, 1996 : Ord. 11978 § 7, 1995: Ord. 10870 § 366, 1993).

21A.14.070 Attached dwellings and group residences - Applicability. The standards of K.C.C. 21A.14.080 through 21A.14.090 shall apply to all new apartment developments exceeding four dwelling units, new townhouse development and new group residences except Class I Community Residential Facilities ("CRF-I"). Expansions of existing development that involve four or more dwelling units shall be subject to compliance with K.C.C. 21A.14.080 to 21A.14.090. (Ord. 13086 § 3, 1998 : Ord. 10870 § 367, 1993).

21A.14.080 Attached dwellings and group residences - Vehicular access and parking location. A. On sites abutting an alley constructed to a width of at least 20 feet, apartment and townhouse development and all group residences except Class I Community Residential Facilities ("CRF-I") shall have parking areas placed to the rear of buildings with primary vehicular access via the alley, except when waived by the director due to physical site limitations.

B. When alley access is provided, no additional driveway access from the public street shall be allowed except as necessary to access parking under the structure or for fire protection.

C. When the number of uncovered common parking spaces for attached dwellings and group residences exceed 30 spaces and when there is alley access, no more than 50 percent of these uncovered parking spaces shall be permitted between the street property line and any building, except when authorized by the director due to physical site limitations. (Ord. 11978 § 8, 1995: Ord. 10870 § 368, 1993).

21A.14.090 Attached dwellings and group residences - Building facade modulation. Apartment and townhouse developments and all group residences shall provide building facade modulation on facades exceeding 60 feet and facing abutting streets or properties zoned R-1 through R-4. The following standards shall apply:

A. The maximum wall length without modulation shall be 30 feet; and

B. The sum of the modulation depth and the modulation width shall be no less than eight feet. Neither the modulation depth nor the modulation width shall be less than two feet.

C. Any other technique approved by the director that achieves the intent of this section. (Ord. 11978 § 9, 1995 : Ord. 10870 § 369, 1993).

21A.14.110 Mixed use development - Percentages of residential uses. Residential uses in mixed use developments shall be subject to the following limits:

A. A maximum of fifty percent of the total built floor area when located in NB zones; and

B. A maximum of seventy-five percent of the total built floor area when located in CB, RB and O zones provided that the total percentage may be increased by an additional ten percent with the approval of the director. (Ord. 11978 § 11, 1995: Ord. 10870 § 371, 1993).

21A.14.120 Mixed use development - Residential density. Base residential density for mixed use developments shall be determined using total site area according to K.C.C. 21A.12.040A. (Ord. 10870 § 372, 1993).

21A.14.130 Mixed use development - Building floor area. A. For mixed use developments that utilize at least 25 percent of building square footage for residential uses in the NB zone and at least 50 percent of building square footage in the CB, RB or O zones, the building floor area ratio shall be as follows:

1. 1.5/1 in NB zones;
2. 3.5/1 in CB zones; and
3. 4.0/1 in RB and O zones;

B. Building floor area ratios of subsection A may be increased when all required parking is contained within a common parking structure, as follows:

1. 2.0/1 in NB zones;
2. 4.5/1 in CB zones; and
3. 5.0/1 in RB and O zones. (Ord. 11978 § 12, 1995: Ord. 10870 § 373, 1993).

21A.14.140 Mixed use development - Shared parking. For mixed use developments, a 20 percent reduction of required parking shall be permitted when the criteria of K.C.C. 21A.18.040. for shared parking facilities are met. (Ord. 10870 § 374, 1993).

21A.14.145 Mixed use development - phasing - required plans, requirements, covenants, recordings -- review and approval. When residential and commercial uses are proposed to be contained in separate structures and the structures containing residential uses are proposed to be built prior to those containing commercial uses, then a commercial site development permit shall be required and as well as the following:

A. The applicant shall submit a site plan showing the entire mixed use development. The plan shall show project features including the location of the residential and commercial structures, parking areas, landscaping planters, sidewalks, and pedestrian linkages. The plan shall be drawn to scale and provide sufficient detail to ensure all zoning and development standards are met for the entire development.

B. Infrastructure plans, including storm drainage facilities, shall be sized to accommodate the needs of the entire mixed use development. The infrastructure shall be installed with the first phase of the development up to or near the commercial building(s) unless the applicant demonstrates to the department's satisfaction that there is potential for significant damage to the infrastructure during the construction of any later phase of construction.

C. For the purpose of informing future property owners of limitations on future development because of the mixed use provisions of this title, the applicant shall record a covenant on the property that states the restrictions upon the remaining portions of the site that they shall only be used for commercial uses. The covenant shall be recorded prior to the issuance of the building permit for the residential structure(s). The covenant shall be subject to review and approval by the department. (Ord. 13851 § 1, 2000).

21A.14.150 Mobile home parks - Standards for existing parks . A. Mobile home parks established prior to the effective date of this code shall continue to be governed by all standards relating to density, setbacks, landscaping and off-street parking in effect at the time they were approved.

B. Placement of new accessory structures and replacement mobile homes, either standard or nonstandard, in these mobile home parks shall be governed by the dimensional standards in effect when the parks were approved, unless two or more replacement mobile homes are proposed to be installed adjacent to each other under the flexible setback option set forth in K.C.C. 21A.14.170. Where internal setbacks are not specified, the average of the prevailing setbacks on the pads to either side of the proposed new or replacement structure shall apply.

C. No spaces or pads in an existing mobile home park shall be used to accommodate recreational vehicles (RVs), except when the spaces or pads were specifically for RVs at the time the park was established.

D. An existing mobile home park may be enlarged, provided the proposed enlargement meets the standards set forth in K.C.C. 21A.14.160 and K.C.C. 21A.14.170.

E. Both insignia and non-insignia mobile homes may be installed in established parks, provided that all mobile homes supported by piers shall be fully skirted, and that nonstandard mobile homes shall meet the minimum livability and safety requirements set forth in K.C.C. Title 16, Building Code and Construction Standards. (Ord. 10870 § 375, 1993).

21A.14.160 Mobile home parks - Standards for new parks. New mobile home parks shall be developed subject to the following standards:

A. A mobile home park shall be at least three acres in area ;

B. Residential densities in a mobile home park shall be as follows:

1. Six dwellings per acre in R-4 zone;

2. The base density of the zone in which the park is located in all R-6 through R-48 zones; and

3. Mobile home parks shall be eligible to achieve the maximum density permitted in the zone by providing the affordable housing benefit for mobile home parks set forth in K.C.C. 21A.34;

C. Both insignia and non-insignia mobile homes may be installed in mobile home parks, provided that non-insignia mobile homes shall meet the minimum livability and safety requirements set forth in K.C.C. Title 16, Building Code;

D. A mobile home park shall be exempt from impervious surface limits set forth in K.C.C. 21A.12;

E. At least one of the off-street parking spaces required for each mobile home shall be located on or adjacent to each mobile home pad;

F. Internal roads and sidewalks shall provide access to each mobile home space and shall be constructed in accordance with the adopted King County road standards for residential minor access streets;

G. There shall be a minimum of ten feet of separation maintained between all mobile homes on the site, unless the flexible setback option set forth in K.C.C. 21A.14.170 is used. Accessory structures shall be located no closer than:

1. Ten feet to mobile homes on adjacent spaces, unless constructed of noncombustible materials, in which case the minimum setback shall be five feet;

2. Five feet to accessory structures of mobile homes on adjacent spaces; and

3. Five feet to the mobile home or other accessory structures on the same space, except a carport or garage may be attached to the mobile home, and the separation may be waived when such structures are constructed of noncombustible materials;

H. All mobile homes and RVs supported by piers shall be fully skirted; and

I. A mobile home park may include a storage area for RVs owned by residents of the park, provided the storage area contains no utility hook-ups and no RV within the storage area shall be used as living quarters. (Ord. 11802 § 6, 1995; Ord. 10870 § 376, 1993).

21A.14.170 Mobile home parks - Alternative design standards. As an alternative to the building separation and internal street standards of K.C.C. 21A.14.160:

A. Building separation requirements or setbacks between mobile homes and accessory structures on adjacent spaces may be modified, provided:

1. The common walls meet the fire protection standards set forth in the Uniform Building Code and the standards set forth in the Uniform Fire Code for duplexes, multifamily and condominium developments, as applicable; and

2. Rental agreement clauses, by-laws or other legal mechanisms stipulate maintenance responsibilities for structures, fences and yards ;

B. Private streets may be used with a minimum driving surface of 22 feet in width, provided:

1. The streets comply in all other respects with the road standards ;

2. All required parking is located off-street and as specified in K.C.C. 21A.14.160E; and

3. Such streets shall not:

a. directly connect two or more points of vehicular access to the park; or

b. serve over 100 dwelling units within the park. (Ord. 10870 § 377, 1993).

21A.14.180 On-site recreation - Space required. A. Residential developments if more than four units in the UR and R zones, stand-alone townhouse developments in the NB zone on property designated commercial outside of center in the urban area of more than four units and mixed use developments if more than four units, shall provide recreation space for leisure, play and sport activities as follows:

1. Residential subdivision and townhouses developed at a density of eight units or less per acre - 390 square feet per unit ;

2. Mobile home park - 260 square feet per unit; and

3. Apartment, townhouses developed at a density of greater than eight units per acre, and mixed use:

a. Studio and one bedroom - 90 square feet per unit;

b. Two bedroom - 130 square feet per unit; and

c. Three or more bedroom - 170 square feet per unit.

B. Any recreation space located outdoors shall:

1. Be of a grade and surface suitable for recreation ;

2. Be on the site of the proposed development ;

3. Have no dimensions less than 20 feet (except trail segments) ;

4. In single detached or townhouse subdivisions, when the required outdoor recreation space exceeds 5000 feet, the space shall have a street roadway or parking area frontage along 10 percent or more of the recreation space perimeter (except trail segments);

5. Be accessible and convenient to all residents within the development; and

6. Be accessible by trail or walkway to any existing or planned community park, public open space or trail system, which may be located on adjoining property.

C. Indoor recreation areas may be credited towards the total recreation space requirement, when the county determines that such areas are located, designed and improved in a manner which provides recreational opportunities functionally equivalent to those recreational opportunities available outdoors. For senior citizen assisted housing, indoor recreation areas need not be functionally equivalent but may include social areas, game and craft rooms, and other multi-purpose entertainment and education areas.

D. Stormwater runoff tracts may be credited for up to 50% of the on-site recreation space requirement, subject to the following criteria:

1. The stormwater runoff tract is dedicated or reserved as a part of a recreation space tract;

2. The detention pond shall be constructed to meet the following conditions:

a. The side slope of the stormwater facilities shall not exceed 33% unless slopes are existing, natural and covered with vegetation;

b. A bypass system or an emergency overflow pathway shall be designed to handle flow exceeding the facility design and located so that it does not pass through active recreation areas or present a safety hazard;

c. The stormwater facilities shall be landscaped in a manner to enhance passive recreation opportunities such as trails and aesthetic viewing; and

d. The stormwater facilities shall be designed so they do not require fencing pursuant to the Surface Water Design Manual.

3. In the case of joint use of the tract for stormwater facilities and recreation space, the King County department of public works shall be responsible for maintenance of the stormwater facilities only and will require an access easement for that purpose. (Ord. 12522 § 7, 1996: Ord. 11978 § 13, 1995: Ord. 11621 § 48, 1994: 10870 § 378, 1993).

21A.14.185 Recreation space - Fees in lieu of. If on-site recreation space is not provided, the applicant shall pay a fee-in-lieu of actual recreation space. King County acceptance of this payment is discretionary, and may be permitted if the proposed on-site recreation space does not meet the criteria of this chapter, or the recreation space provided within a county park in the vicinity will be of greater benefit to the prospective residents of the development. Fees provided in-lieu of on-site recreation space shall be determined annually by the parks division on the basis of the typical market value of the required recreation space land area prior to the development. Any recreational space provided by the applicant shall be credited toward the required fees. (Ord. 11621 § 49, 1994).

21A.14.190 On-site recreation - Play areas required. A. All single detached subdivisions, apartment, townhouse and mixed use development, excluding age restricted senior citizen housing, shall provide to children play areas within the recreation space on-site, except when facilities are available to the public within 1/4 mile that are developed as parks or playgrounds and are accessible without crossing of arterial streets.

B. If any play apparatus is provided in the play area, the apparatus shall meet Consumer Product Safety Standards for equipment, soft surfacing and spacing, and shall be located in an area that is:

1. At least 400 square feet in size with no dimension less than twenty feet; and

2. Adjacent to main pedestrian paths or near building entrances. (Ord. 13022 § 20, 1998: Ord. 10870 § 379, 1993).

21A.14.200 On-site recreation - Maintenance of recreation space or dedication. A. Recreation space as defined in K.C.C. 21A.14.180B may be dedicated as a park open to the public in lieu of providing the on-site recreation required above when the following criteria are met:

1. The dedicated area is at least twenty acres in size, except when adjacent to an existing or planned county park;
2. The dedicated land provides one or more of the following:
 - a. Shoreline access,
 - b. Regional trail linkages,
 - c. Habitat linkages,
 - d. Recreation facilities, or
 - e. Heritage sites; and
3. The dedicated area is located within 1 mile of the project site.

B. Unless the recreation space is dedicated to King County pursuant to subsection A., maintenance of any recreation space retained in private ownership shall be the responsibility of the owner or other separate entity capable of long-term maintenance and operation in a manner acceptable to the parks division. (Ord. 13022 § 21, 1998: Ord. 10870 § 380, 1993).

21A.14.210 Storage space and collection points for recyclables. Developments shall provide storage space for the collection of recyclables as follows:

A. The storage space shall be provided at the following rates, calculated based on any new dwelling unit in multiple-dwelling developments and any new square feet of building gross floor area in any other developments:

1. One and one-half square feet per dwelling unit in multiple-dwelling developments except where the development is participating in a county-sponsored or approved direct collection program in which individual recycling bins are used for curbside collection;
2. Two square feet per every 1,000 square feet of building gross floor area in office, educational and institutional developments;
3. Three square feet per every 1,000 square feet of building gross floor area in manufacturing and other nonresidential developments; and
4. Five square feet per every 1,000 square feet of building gross floor area in retail developments.

B. The storage space for residential developments shall be apportioned and located in collection points as follows:

1. The required storage area shall be dispersed in collection points throughout the site when a residential development comprises more than one building.
2. There shall be one collection point for every 30 dwelling units.
3. Collection points may be located within residential buildings, in separate buildings/structures without dwelling units, or outdoors.
4. Collection points located in separate buildings/structures or outdoors shall be no more than 200 feet from a common entrance of a residential building.
5. Collection points shall be located in a manner so that the swing of any collection point gate does not obstruct pedestrian or vehicle traffic or access to parking or that the gate swing or any hauling truck does not project into any public right-of-way.

C. The storage space for nonresidential developments shall be apportioned and located in collection points as follows:

1. Storage space may be allocated to a centralized collection point.

2. Outdoor collection points shall not be located in any required setback areas.

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3. Collection points shall be located in a manner so that the swing of any collection point gate does not obstruct pedestrian or vehicle traffic or access to parking or that the gate swing or any hauling truck does not project into any public right-of-way.

4. Access to collection points may be limited, except during regular business hours and/or specified collection hours.

D. The collection points shall be designed as follows:

1. Dimensions of the collection points shall be of sufficient width and depth to enclose containers for recyclables.

2. Architectural design of any structure enclosing an outdoor collection point or any building primarily used to contain a collection point shall be consistent with the design of the primary structure(s) on the site.

3. Collection points shall be identified by signs not exceeding two square feet.

4. A six-foot wall or fence shall enclose any outdoor collection point, excluding collection points located in industrial developments that are greater than 100 feet from residentially zoned property.

5. Enclosures for outdoor collection points and buildings used primarily to contain a collection point shall have gate openings at least 12 feet wide for haulers. In addition, the gate opening for any building or other roofed structure used primarily as a collection point shall have a vertical clearance of at least 12 feet.

6. Weather protection of recyclables shall be ensured by using weather-proof containers or by providing a roof over the storage area.

E. Only recyclable materials generated on-site shall be collected and stored at such collection points. Except for initial sorting of recyclables by users, all other processing of such materials shall be conducted off-site.

F. The director may waive or modify specific storage space and collection point requirements set forth in this section if the director finds, in writing, that an alternate recycling program design proposed by the applicant meets the needs of the development and provides an equivalent or better level of storage and collection for recyclables. (Ord. 12461 § 1, 1996: Ord. 10870 § 381, 1993).

21A.14.220 Fences. Fences are permitted as follows: A. Fences exceeding a height of six feet shall comply with the applicable street and interior setbacks of the zone in which the property is located, except ;

1. Fences located on a rockery, retaining wall, or berm within a required setback area are permitted subject to the following requirements ;

a. In R-1 through R-18, UR, RA and the resource zones:

(1) The total height of the fence and the rockery, retaining wall or berm upon which the fence is located shall not exceed a height of ten feet. This height shall be measured from the top of the fence to the ground on the low side of the rockery, retaining wall or berm; and

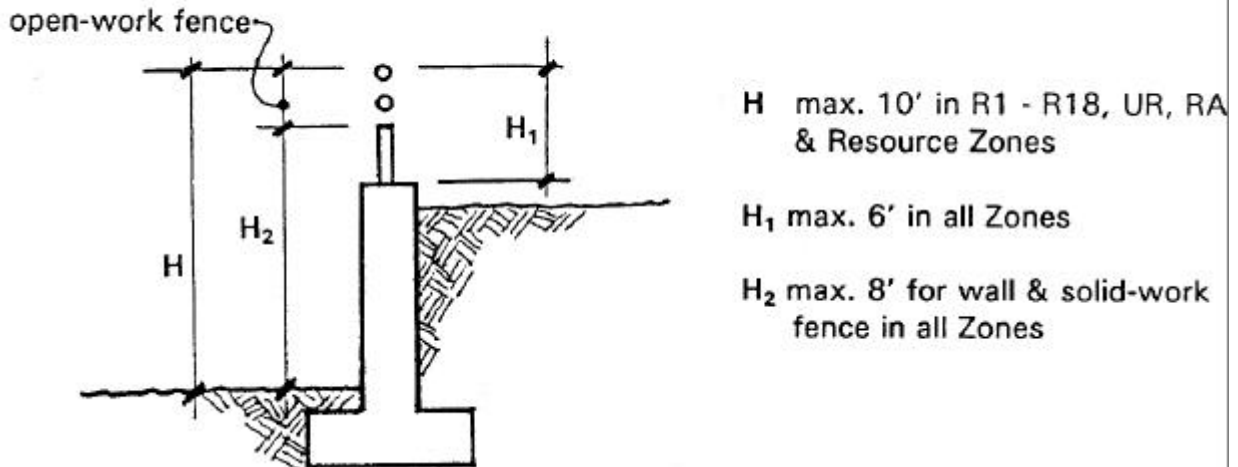
(2) The total height of the fence itself, measured from the top of the fence to the top of the rockery, retaining wall or berm, shall not exceed six feet.

b. In the R-24, R-48 and commercial/industrial zones, the height of the fence, measured from the top of the fence to the top of the rockery, retaining wall or berm, shall not exceed six feet.

c. Any portion of the fence above a height of eight feet, measured to include both the fence and the rockery, retaining wall, or berm (as described in a1. above), shall be an open-work fence.

B. Fences located on a rockery, retaining wall or berm outside required setback areas shall not exceed the building height for the zone, measured in accordance with the standards established in the King County Building Code, Title 16.

RETAINING WALL WITH FENCE IN SETBACK



C. Electric fences shall:

1. Be permitted in all zones, provided that when placed within R-4 through R-48 zones, additional fencing or other barriers shall be constructed to prevent inadvertent contact with the electric fence from abutting property;
2. Comply with the following requirements:
 - a. An electric fence using an interrupted flow of current at intervals of about one second on and two seconds off shall be limited to 2,000 volts at 17 milliamp;
 - b. An electric fence using continuous current shall be limited to 1,500 volts at seven milliamp;
 - c. All electric fences in the R-4 through R-48 zones shall be posted with permanent signs a minimum of 36 square inches in area at 50 foot intervals stating that the fence is electrified; and
 - d. Electric fences sold as a complete and assembled unit can be installed by an owner if the controlling elements of the installation are certified by an A.N.S.I. approved testing agency; and

D. Except as specifically required for the necessary security related to a nonresidential use, no barbed or razor-wire fence shall be located in any R-4 through R-48 zone. (Ord. 12987 § 5, 1998: Ord. 11621 § 50, 1994: 10870 § 382, 1993).

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21A.14.230 Trail corridors - Applicability. Trail easements shall be provided by any development, except for single detached residential permits, when such developments are located within any community or regional trail corridor identified by an adopted King County Functional Plan or Community Plan identifying community and/or regional trail systems. The residents or tenants of the development shall be provided access to the trail easement. The area of the trail easement shall be counted as part of the site for purposes of density and floor area calculations. (Ord. 10870 § 383, 1993).

21A.14.240 Trail corridors - Design standards. Trail design shall be reviewed by the department of development and environmental services for consistency with adopted standards for:

- A. Width of the trail corridor;
- B. Location of the trail corridor on the site;
- C. Surfacing improvements; and
- D. Use(s) permitted within the corridor. (Ord. 11621 § 51, 1994 : 10870 § 384, 1993).

21A.14.250 Trail corridors - Maintenance of trail corridors/improvements. Maintenance of any trail corridor or improvements, retained in private ownership, shall be the responsibility of the owner or other separate entity capable of long-term maintenance and operation in a manner acceptable to the parks division. (Ord. 10870 § 385, 1993).

21A.14.260 Wildlife habitat corridors - applicability. Habitat corridors shall be set aside and protected along the designated wildlife habitat network adopted by the King County Comprehensive Plan as follows:

A. Wildlife habitat corridors shall apply to the following development activities on parcels which include a portion of a designated wildlife habitat corridor:

- 1. All urban planned developments, fully contained communities, subdivisions, short subdivisions and binding site plans ;
- 2. All building permits on individual lots created prior to January 1, 1995.

B. Habitat corridors shall be identified and protected in one of the following ways:

1. Urban planned developments, fully contained communities, binding site plans, subdivisions and short subdivisions shall either place the corridor in a contiguous permanent open-space tract with all developable lots sited on the remaining portion of the project site, or shall design the lots so that conservation easements on individual lots can form a contiguous easement covering the corridor.

2. Individual lots shall place the corridor in a conservation easement.

C. All tracts or conservation easements shall be configured to meet the design standards in K.C.C. 21A.14.270. (Ord. 13694 § 90, 1999: Ord. 11621 § 52, 1994).

21A.14.270 Wildlife habitat corridors - Design standards. Corridor design shall be reviewed by the department for consistency with the following standards:

A. The wildlife habitat corridor shall be sited on the property in order to meet the following conditions:

1. Forms one contiguous tract that enters and exits the property at the points the designated wildlife habitat network crosses the property boundary;

2. Maintains a width, wherever possible, of 300 feet. The network width shall not be less than 150 feet wide at any point ;

3. Be contiguous with and may include sensitive area tracts and their buffers; and

B. When feasible, the wildlife habitat corridor shall be sited on the property in order to meet the following conditions:

1. Connect isolated sensitive areas or habitat; and

2. Connect with wildlife habitat corridors, open space tracts or wooded areas on adjacent properties, if present.

C. The wildlife corridor tract shall be permanently marked consistent with the methods contained in K.C.C. 21A.24.160. Conservation easements are exempt from the permanent marking requirement.

D. A management plan for the wildlife corridor contained within a tract or tracts shall be prepared which specifies the permissible extent of recreation, forestry or other uses compatible with preserving and enhancing the wildlife habitat value of the tract or tracts. The management plan shall be reviewed and approved by the department. The approved management plan for an urban planned development or subdivision shall be contained within and recorded with the covenants, conditions and restrictions (CCRs). If the wildlife corridor is contained in a conservation easement, a management plan is not required, but may be submitted to the department for review and approval, and recorded with the conservation easement.

E. Clearing within the wildlife corridor contained in a tract or tracts shall be limited to that allowed by the management plan. No clearing shall be allowed within a wildlife corridor contained within a conservation easement on individual lots, unless the property owner has an approved management plan.

F. A homeowners association or other entity capable of long term maintenance and operation shall be established to monitor and assure compliance with the management plan.

G. Wildlife corridors set aside in tracts or conservation easements shall meet the provisions in K.C.C. 16.82.150.

H. The permanent open space tract containing the wildlife corridor may be credited toward the other applicable requirements such as surface water management and the recreation space requirement of K.C.C. 21A.14.180, provided

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the proposed uses within the tract are compatible with preserving and enhancing the wildlife habitat value. Restrictions on other uses within the wildlife corridor tract shall be clearly identified in the management plan.

I. At the discretion of the director, these standards may be waived or reduced for public facilities such as schools, fire stations, parks, and public road projects. (Ord. 11621 § 53, 1994).

21A.14.280 Rural industry development standards. A. The purpose of the rural industries section is to establish standards for industrial (I) zoned development in rural areas. Site and building designs, buffering, compatible commercial and industrial uses are required to maintain rural character.

B. The following development standards shall apply to uses locating in the industrial (I) zone within the rural area;

1. All uses occurring outside an enclosed building shall be screened from adjoining rural residential uses;

2. All buildings shall be set back 50-foot from perimeter streets and from residential zoned areas;

3. The total permitted floor area\lot area ratio shall not exceed 100 percent for a development consisting of multiple lots and 125 percent on any individual building lot;

4. The total permitted impervious lot coverage shall not exceed 70 percent for a development consisting of multiple lots and 80 percent on any individual building lot;

5. The landscaping standards set forth in K.C.C. 21A.16 are modified as follows:

a. 20-foot wide Type II landscaping shall be provided along exterior streets,

b. 20-foot wide Type I landscaping shall be provided along property lines adjacent to rural residential zoned areas; and

c. 15-foot wide Type II landscaping shall be provided along lines adjacent to nonresidential zoned areas.

6. Outdoor lighting shall be focused downward and configured to minimize intrusion of light into surrounding rural residential areas;

7. Refuse collection/recycling areas and loading or delivery areas shall be located at least 100 feet from residential areas and screened with a solid view obscuring barrier;

8. Off street parking standards shall be no less than one space for every 1000 square feet of floor area and no greater than one space for every 500 square feet of floor area;

9. Sign are allowed as follows:

a. Signs shall not exceed an area of 64 square feet per sign;

b. Pole signs shall not be permitted; and

c. Signs shall not be internally illuminated;

10. The director shall approve building design, materials and color. Buildings shall be designed and use accent materials (e.g. wood and brick), non-reflective glass, and muted colors to be compatible with rural character; and

11. Building height shall be limited to 40 feet. (Ord. 11621 § 99, 1994).

21A.14.300 Short subdivisions or short subdivision alterations -- adequacy of access - right of way use permits. A. Each lot within the short subdivision or short subdivision alteration shall have acceptable access to a street conforming to county road standards or to a lower level of improvement acceptable to the road engineer. Individual lots may be served by access panhandles established either by fee ownership or easement, subject to approval of the division. In order to assure safe and adequate access, the manager:

1. May approve private streets, provided the private street requirements contained in Section 2.05, Private Streets, of the county road standards as adopted in K.C.C. chapter 14.42 are met;

2. May limit direct access to certain streets and require on-site public or private streets in lieu of individual driveways or access panhandles, in accordance with the county road standards;

3. Shall require off-site improvements to public or private streets needed to provide access from the short subdivision to a road acceptable to the road engineer; and

4. Shall assure that the number of lots to be served by the road system complies with the road standards.

B. Short subdivisions involving construction within county right-of-way shall obtain a right-of-way use permit pursuant to K.C.C. chapter 14.28. (Ord. 13694 § 87, 1999).

Definitions, Ordinance 13694: See K.C.C. chapter 19A.04.

21A.14.310 Proposed formal subdivisions, short subdivisions or binding site plans - railroad buffer strips. Where railroads abut proposed formal subdivisions, short subdivisions or binding site plans, measures to provide a physical separation between the two uses shall be required. These measures may include the use: grade separations, setbacks or barriers such as walls and fences. (Ord. 13694 § 88, 1999).

Definitions, Ordinance 13694: See K.C.C. chapter 19A.04.

21A.14.320 Preliminary subdivision and short subdivision approval - maintenance of private streets, easements and utilities required. As a condition of preliminary subdivision and short subdivision approval, all private streets, easements, community utilities and properties shall be maintained by the owners of the property served by them and kept in good repair at all times. In order to insure continued good repair, it must be demonstrated to the department prior to plat recording that:

A. There is a workable organization to guarantee maintenance with a committee or group to administer the organizational functions; and

B. There is a means for assessing maintenance costs equitably to property owners served by the private streets, easements, community utilities and properties. (Ord. 13694 § 89, 1999).

Definitions, Ordinance 13694: See K.C.C. chapter 19A.04.

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Chapter 21A.16
DEVELOPMENT STANDARDS - LANDSCAPING AND WATER USE

Sections:

- 21A.16.010 Purpose.
- 21A.16.020 Application.
- 21A.16.030 Land use grouping.
- 21A.16.040 Landscaping - Screen types and description.
- 21A.16.050 Landscaping - Street frontages.
- 21A.16.060 Landscaping - Interior lot lines.
- 21A.16.070 Landscaping - Surface parking areas.
- 21A.16.080 Landscaping - Adjacent to freeway rights-of-way.
- 21A.16.085 Landscaping - General standards for all landscape areas.
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- 21A.16.370 Water use - Irrigation system maintenance.

21A.16.010 Purpose. The purpose of this chapter is to preserve the aesthetic character of communities; to improve the aesthetic quality of the built environment; to promote retention and protection of existing vegetation; to promote water efficiency; to promote native wildlife; to reduce the impacts of development on drainage systems and natural habitats; and to increase privacy for residential zones by:

- A. Providing visual relief from large expanses of parking areas and reduction of perceived building scale;
- B. Providing physical separation between residential and non-residential areas;
- C. Providing visual screens and barriers as a transition between differing land uses;
- D. Retaining existing vegetation and significant trees by incorporating them into the site design;
- E. Providing increased areas of permeable surfaces to allow for:
 - 1. Infiltration of surface water into groundwater resources ;
 - 2. Reduction in the quantity of storm water discharge; and
 - 3. Improvement in the quality of storm water discharge ;
- F. Encouraging the use of native plant species by their retention or use in the landscape design;
- G. Requiring water use efficiency through water budgeting and efficient irrigation design standards;
- H. Encouraging the use of a diversity of plant species which promote native wildlife habitat. (Ord. 11210 § 1, 1994: Ord. 10870 § 386, 1993).

21A.16.020 Application. Except for communication facilities regulated pursuant to K.C.C. 21A.26, all new development listed in K.C.C. 21A.16.030 shall be subject to the landscaping provisions of this chapter, provided that specific landscaping and tree retention provisions for uses established through a conditional use permit, a special use permit, or an urban planned development application shall be determined during the applicable review process. (Ord. 11210 § 2, 1994: Ord. 10870 § 387, 1993).

21A.16.030 Land use grouping. In order to facilitate the application of this chapter, the land uses of K.C.C. 21A.08 have been grouped in the following manner.

A. Residential development shall refer to those uses listed in K.C.C. 21A.08.030, except those uses listed under Accessory uses, provided:

1. Attached/group residences shall refer to:
 - a. townhouses, except as provided in subsection 2a;
 - b. apartments, and detached dwelling units developed on common property at a density of 12 or more units per acre;
 - c. senior citizen assisted;
 - d. temporary lodging;
 - e. group residences other than Type I community residential facilities;
 - f. mobile home parks; and
2. Single family development shall refer to:
 - a. residential subdivisions, including attached and detached dwelling units on individually platted lots;
 - b. any detached dwelling units located on a lot; and
 - c. Type I community residential facilities.

B. Commercial development shall refer to those uses in:

1. K.C.C. 21A.08.040 as amusement/entertainment uses, except golf facilities;
2. K.C.C. 21A.08.050 except recycling centers, health and educational services, daycare I, churches, synagogues, and temples; and
3. K.C.C. 21A.08.070, except forest product sales and agricultural crop sales.

C. Industrial development shall refer to those uses listed in:

1. K.C.C. 21A.08.050 as recycling center;
2. K.C.C. 21A.08.060 except government services;
3. K.C.C. 21A.08.080; and
4. K.C.C. 21A.08.090 as mineral extraction and processing.

D. Institutional development shall refer to those uses listed in:

1. K.C.C. 21A.08.040 as cultural uses, except arboretums;
2. K.C.C. 21A.08.050 as churches, synagogues and temples, health services, and education services except specialized instruction schools permitted as an accessory use; and
3. K.C.C. 21A.08.060 as government services.

E. Utility development shall refer to those listed in K.C.C. 21A.08.060 as utility facilities.

F. Uses contained in K.C.C. 21A.08 that are not listed in subsections A-E of this section shall not be subject to landscaping and tree retention requirements except as specified in any applicable review of a conditional use or special use permits. (Ord. 11621 § 54, 1994: 11354 § 1, 1994: Ord. 11210 § 3, 1994: Ord. 10870 § 388, 1993).

21A.16.040 Landscaping - Screen types and description. The three types of landscaping screens are described and applied as follows:

A. Type I landscaping screen:

1. Type I landscaping is a "full screen" that functions as a visual barrier. This landscaping is typically found adjacent to freeways and between residential and non-residential areas.

2. Type I landscaping shall minimally consist of:

a. A mix of primarily evergreen trees and shrubs generally interspersed throughout the landscape strip and spaced to form a continuous screen;

b. Between 70 and 90 percent evergreen trees;

c. Trees provided at the rate of one per 10 linear feet of landscape strip and spaced no more than 30 feet apart on center;

d. Evergreen shrubs provided at the rate of one per linear four feet of landscape strip and spaced no more than 8 feet apart on center; and

e. Ground cover pursuant to K.C.C. 21A.16.090 ;

B. Type II landscaping screen:

1. Type II landscaping is a "filtered screen" that functions as a visual separator. This landscaping is typically found between commercial and industrial uses; between differing types of residential development; and to screen industrial uses from the street;

2. Type II landscaping shall minimally consist of:

a. A mix of evergreen and deciduous trees and shrubs generally interspersed throughout the landscape strip spaced to create a filtered screen;

b. At least 50 percent deciduous trees and at least 30 percent evergreen trees;

c. Trees provided at the rate of one per 20 linear feet of landscape strip and spaced no more than 30 feet apart on center;

d. Shrubs provided at the rate of one per four linear feet of landscape strip and spaced no more than eight feet apart on center; and

e. Ground cover pursuant to K.C.C. 21A.16.090 ;

C. Type III landscaping screen:

1. Type III landscaping is a "see-through screen" that functions as a partial visual separator to soften the appearance of parking areas and building elevations. This landscaping is typically found along street frontage or between apartment developments ;

2. Type III landscaping shall minimally consist of:

a. A mix of evergreen and deciduous trees generally interspersed throughout the landscape strip and spaced to create a continuous canopy ;

b. At least 70 percent deciduous trees;

c. Trees provided at the rate of one per linear 25 feet of landscape strip and spaced no more than 30 feet apart on center ;

d. Shrubs provided at the rate of one per four linear feet of landscape strip and spaced no more than 8 feet apart on center; and

e. Ground cover pursuant to K.C.C. 21A.16.090. (Ord. 11621 § 55, 1994: 11210 § 4, 1994: Ord. 10870 § 389, 1993).

21A.16.050 Landscaping - Street frontages. The average width of perimeter landscaping along street frontages shall be provided as follows:

A. Twenty feet of Type II landscaping shall be provided for an institutional use, excluding playgrounds and playfields ;

B. Ten feet of Type II landscaping shall be provided for an industrial development;

C. Ten feet of Type II landscaping shall be provided for an above ground utility facilities development, excluding distribution and transmission corridors, located outside a public right-of-way;

D. Ten feet of Type III landscaping shall be provided for a commercial or attached/group residence development; and

E. For single family subdivisions:

1. Trees shall be planted at the rate of one tree for every 40 feet of frontage along a neighborhood collector street or arterial street.

2. The trees shall be:

a. Located within the street right-of-way if permitted by the custodial state or local agency;

b. No more than 20 feet from the street right-of-way line when located within a lot;

c. Maintained by the adjacent landowner unless part of a county maintenance program; and

d. A species approved by the county if located within the street right-of way and compatible with overhead utility lines.

3. The trees may be spaced at irregular intervals in order to accommodate sight distance requirements for driveways and intersections. (Ord. 11621 § 56, 1994: 11210 § 5, 1994: Ord. 10870 § 390, 1993).

21A.16.060 Landscaping - Interior lot lines. The average width of perimeter landscaping along interior lot lines shall be provided as follows:

A. Twenty feet of Type I landscaping shall be included in a commercial or industrial development along any portion adjacent to a residential development;

B. Five feet of Type II landscaping shall be included in an attached/group residence development, except that along portions of the development adjacent to property developed with single detached residences or vacant property that is zoned RA, UR or R(1-8), the requirement shall be ten feet of Type II landscaping;

C. Ten feet of Type II landscaping shall be included in an industrial development along any portion adjacent to a commercial or institutional development; and

D. Ten feet of Type II landscaping shall be included in an institutional use, excluding *[of playgrounds and playfields, or an above-ground utility facility development, excluding] distribution or transmission corridors, when located outside a public right-of-way. (Ord. 11939 § 1, 1995: Ord. 11210 § 6, 1994: Ord. 10870 § 391, 1993).

21A.16.070 Landscaping - Surface parking areas. Parking area landscaping shall be provided within surface parking areas with ten or more parking stalls for the purpose of providing shade and diminishing the visual impacts of large paved areas as follows:

A. Residential developments with common parking areas shall provide planting areas at the rate of 20 square feet per parking stall;

B. Commercial, industrial, or institutional developments, shall provide landscaping at a rate of:

1. Twenty square feet per parking stall when 10 to 30 parking stalls are provided; and

2. Twenty-five square feet per parking stall when 31 or more parking stalls are provided;

C. Trees shall be provided and distributed throughout the parking area at a rate of:

*[Editor's Note: language not designated by underlining in Ordinance 11939.]

1. One tree for every five parking stalls for a commercial or industrial development; and
2. One tree for every ten parking stalls for residential or institutional development;
- D. The maximum distance between any parking stall and landscaping shall be no more than 100 feet;
- E. Permanent curbs or structural barriers shall be provided to protect the plantings from vehicle overhang; and
- F. Parking area landscaping shall consist of:
 1. Canopy-type deciduous trees, evergreen trees, evergreen shrubs and ground covers planted in islands or strips;
 2. Shrubs that do not exceed a maintained height of 42 inches;
 3. Plantings contained in planting islands or strips having an area of at least 100 square feet and with a narrow dimension of no less than five feet;
 4. Ground cover pursuant to K.C.C. 21A.16.090; and
 5. At least 70 percent of trees are deciduous. (Ord. 11210 § 7, 1994 : Ord. 10870 § 392, 1993).

21A.16.080 Landscaping - Adjacent to freeway rights-of-way. A. All residential developments shall provide a minimum average width of 20 feet of Type I landscaping adjacent to freeway rights-of-way.

B. All other developments shall provide a minimum average width of 20 feet of Type III landscaping adjacent to freeway rights-of-way. (Ord. 11210 § 8, 1994: Ord. 10870 § 393, 1993).

21A.16.085 Landscaping - General standards for all landscape areas. All new landscape areas proposed for a development shall be subject to the following provisions:

- A. Berms shall not exceed a slope of two horizontal feet to one vertical foot (2:1).
- B. All new turf areas, except all-weather, sand-based athletic fields shall:
 1. Be augmented with a two-inch layer of organic material cultivated a minimum of six inches deep, or
 2. Have an organic content of five percent or more to a depth of six inches as shown in a soil sample analysis. The soil analysis shall include:
 - a. Determination of soil texture, indicating percentage of organic matter,
 - b. An approximated soil infiltration rate (either measured or derived from soil/texture /infiltration rate tables). A range of infiltration rates shall be noted where appropriate, and
 - c. Measure Ph value.
- C. Except as specifically outlined for turf areas in subsection B, the organic content of soils in any landscape area shall be as necessary to provide adequate nutrient and moisture-retention levels for the establishment of plantings.
- D. Landscape areas, except turf or areas of established groundcover, shall be covered with at least two inches of mulch to minimize evaporation.
- E. Plants having similar water use characteristics shall be grouped together in distinct hydrozones.
- F. Plant selection shall consider adaptability to climatic, geologic, and topographical conditions of the site. Preservation of existing vegetation is encouraged. (Ord. 11210 § 9, 1994).

21A.16.090 Landscaping - Additional standards for required landscape areas. In addition to the general standards of K.C.C. 21A.16.085, landscape areas required pursuant to K.C.C. 21A.16.050 through .080 shall conform to the following standards:

A. All plants shall conform to American Association of Nurserymen (AAN) grades and standards as published in the "American Standard for Nursery Stock" manual, provided that existing healthy vegetation used to augment new plantings shall not be required to meet the standards of this manual;

B. Single-stemmed trees required pursuant to this chapter shall at the time of planting conform to the following standards:

1. In parking area landscaping and in street rights-of-way:

a. Deciduous trees shall have a minimum caliper of 1.75 inches and a height of 10 feet, and

b. Coniferous and broadleaf evergreens shall be at least five feet in height;

2. In all other required landscape areas:

a. Deciduous trees shall have a minimum caliper of 1.5 inches and a height of ten feet, and

b. Coniferous and broadleaf evergreen trees shall be at least five feet in height.

C. Multiple-stemmed trees shall be permitted as an option to single-stemmed trees provided that such multiple-stemmed trees are:

1. At least six feet in height, and

2. Not allowed within street rights-of-way;

D. When the width of any landscape strip is 20 feet or greater, the required trees shall be staggered in two or more rows;

E. Shrubs shall be:

1. At least an AAN container class #2 size at time of planting in Type II, III and parking area landscaping,

2. At least 24 inches in height at the time of planting for Type I landscaping, and

3. Maintained at a height not exceeding 42 inches when located in Type III or parking area landscaping;

F. Ground covers shall be planted and spaced to result in total coverage of the majority of the required landscape area within three years.

G. All fences shall be placed on the inward side of any required perimeter landscaping along the street frontage.

H. Required street landscaping may be placed within King County street rights-of-way subject to the County Road Design Standards, provided adequate space is maintained along the street line to replant the required landscaping should subsequent street improvements require the removal of landscaping within the rights-of-way;

I. Required street landscaping may be placed within Washington State rights-of-way subject to permission of the Washington State Department of Transportation.

J. New landscape material provided within areas of undisturbed vegetation or within the protected area of significant trees shall give preference to utilizing indigenous plant species. (Ord. 11621 § 57, 1994: 11210 § 10, 1994: Ord. 10870 § 394, 1993).

21A.16.100 Landscaping - Alternative options. The following alternative landscape options may be allowed, subject to county approval, only if they accomplish equal or better levels of screening, or when existing conditions on or adjacent to the site, such as significant topographic differences,

vegetation, structures or utilities would render application of this chapter ineffective or result in scenic view obstruction:

A. The amount of required landscape area may be reduced to ensure that the total area for required landscaping, and/or the area remaining undisturbed for the purpose of wildlife habitat or corridors does not exceed 15 percent of the net developable area of the site. For the purpose of this subsection, the net developable area of the site shall not include areas deemed unbuildable due to their location within sensitive areas and any associated buffers.

B. The average width of the perimeter landscape strip may be reduced up to 25 percent along any portion where:

1. Berms at least three feet in height or architectural barriers at least six feet in height are incorporated into the landscape design; or
2. The landscape materials are incorporated elsewhere on-site;

C. In pedestrian district overlays, street perimeter landscaping may be waived provided a site plan, consistent with the applicable adopted area zoning document, is approved that provides street trees and other pedestrian-related amenities;

D. Landscaping standards for uses located in a rural town or rural business centers designated by the comprehensive plan may be waived or modified by the director if deemed necessary to maintain the historic character of the area. Where a local or subarea plan with design guidelines has been adopted, the director shall base the landscaping modifications on the policies and guidelines of such plan.

E. When an existing structure precludes installation of the total amount of required site perimeter landscaping, such landscaping material shall be incorporated on another portion of the site.

F. Single-stemmed deciduous tree species that cannot generally be planted and established in larger sizes may have a caliper of less than 1.5 inches; and

G. The number of trees and shrubs to be provided in required perimeter and parking area landscaping may be reduced up to 25 percent when a development uses landscaping materials consisting of species typically associated with the Puget Sound Basin in the following proportions:

1. Seventy-five percent of groundcover and shrubs, and
2. Fifty percent of trees.

H. The department shall, pursuant to K.C.C. 2.98, develop and maintain an advisory listing of trees recommended for new plantings. Such list shall describe their general characteristics and suitability, and provide guidelines for their inclusion within required landscape areas. (Ord. 11621 § 58, 1994 : 11255 § 3, 1994: Ord. 11210 § 11, 1994: Ord. 10870 § 395, 1993).

21A.16.115 Landscaping - Plan design, design review, and installation.

A. The landscape plan submitted to the department shall be drawn on the same base map as the development plans and shall identify the following:

1. Total landscape area and separate hydrozones,
2. Landscape materials botanical/common name and applicable size,
3. Property lines,
4. Impervious surfaces,
5. Natural or man-made water features or bodies,
6. Existing or proposed structures, fences, and retaining walls,
7. Natural features or vegetation left in natural state, and
8. Designated recreational open space areas.

B. The proposed landscape plan shall be certified by a Washington State registered landscape architect, Washington State certified nurseryman, or Washington State certified landscaper.

C. An affidavit signed by an individual specified in subsection B, certifying that the landscaping has been installed consistent with the approved landscaping plan, shall be submitted to the department within 30 days of installation completion, unless the installed landscaping has been inspected and accepted by the department.

D. The required landscaping shall be installed no later than three months after issuance of a certificate of occupancy for the project or project phase. However, the time limit for compliance may be extended to allow installation of such required landscaping during the next appropriate planting season. A financial guarantee shall be required prior to issuance of the certificate of occupancy, if landscaping is not installed and inspected prior to occupancy. (Ord. 11939 § 2, 1995: Ord. 11210 § 12, 1994).

21A.16.180 Maintenance. A. All landscaping shall be maintained for the life of the project.

B. All landscape materials shall be pruned and trimmed as necessary to maintain a healthy growing condition or to prevent primary limb failure ;

C. With the exception of dead, diseased or damaged trees specifically retained to provide wildlife habitat; other dead, diseased, damaged or stolen plantings shall be replaced within three months or during the next planting season if the loss does not occur in a planting season; and

D. Landscape areas shall be kept free of trash. (Ord. 11255 § 2, 1994 : Ord. 10870 § 403, 1993).

21A.16.190 Financial guarantees. Financial guarantees shall be required consistent with the provisions of Title 27A. This time period may be extended to one year by the director, if necessary to cover a planting and growing season. (Ord. 12020 § 52, 1995: Ord. 11210 § 13, 1994: Ord. 10870 § 404, 1993).

21A.16.300 Water use - Applicability of water budget for landscape areas. Irrigation systems of any type are optional components of a landscape area. However, a water budget for irrigation purposes shall be established for all new development, except for:

A. Individually platted single dwelling (attached or detached) residential lots, provided that developer-installed landscaping in common areas of residential projects is not exempt; and

B. Any project with a total landscaped area less than 500 square feet. (Ord. 11250 § 14, 1994).

21A.16.310 Water use - Irrigation water budget calculated. A. The water budget (WB) allocation shall be calculated using the following formula:

$$WB = (Eto) \times (AF) \times (LA) \times (CF)$$

Eto: Referenced Evapotranspiration Rate (net seasonal irrigation requirement in inches - see table below)

AF: Adjustment factor value of 0.8 (i.e., $0.5 \times (Eto)/0.625$ irrigation efficiency coefficient)

LA: Landscape area (square feet)

CF: Conversion factor value of 0.62 (Eto inches to gallons per square foot)

Reference Eto Table - Historical Data*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	No v	De c	Season Total
Monthly Net Irrig. Requiremen t (Inches)	.00	.00	.00	.00	1.59	3.13	4.46	3.51	1.77	.03	.0 0	.0 0	14.49

* These figures are based on a 30-year average of National Weather Service Data and represent the amount of additional irrigation required for turf grass. The figures are adjusted for turf typically used in commercial landscaping.

B. The county shall within three years of the implementation of this chapter, submit an evaluation of the WB calculation formula outlined in subsection A. The evaluation shall include a recommendation to retain or modify the adjustment factor or components thereof, and shall be made in consultation with groups including landscape professionals and water purveyors.

C. The water budget will be calculated upon the total area of the site in landscape areas and in landscape water features (such as decorative ponds, pools or fountains) that are fed by irrigation water. For the purpose of calculating the water budget, "landscape area" shall mean the entire parcel, less:

1. Sensitive areas and their buffers,
2. The building footprint,
3. Driveways,
4. Paved portions of parking lots, and
5. Hardscapes (e.g., decks, patios, sidewalks, and other nonporous areas).

D. Areas such as playgrounds, sport fields, golf courses, school yards, or other recreational spaces where the turf provides a playing surface or serves other recreational purposes may be allowed additional water beyond the established water budget. In order to receive additional water for such turf areas, the applicant shall submit a statement designating such turf areas for recreational purposes and specifying additional water needs above the water budget. This additional water need will be based upon the Eto information for the turfgrass species or species mix used in such turf areas.

E. Landscape water features shall not use potable water unless the water feature recirculates water used in its operation.

F. The irrigation water use may be monitored by the water purveyor on a yearly basis after the date of release of the performance bond.

G. Alternative water sources such as recycled waste water or rainwater are encouraged. Such water sources shall not be subject to the limits of the water budget. (Ord. 11210 § 15, 1994).

21A.16.320 Water use - Estimated water use calculated. The estimated water use shall be calculated using the following provisions.

A. Estimated water use (EWU) shall be calculated for each hydrozone by using the following formula:

$$EWU = \frac{(Eto) \times (PF) \times (HA) \times (CF)}{IE}$$

Eto: Referenced Evapotranspiration Rate (net seasonal irrigation requirement in inches - see table)

PF: Plant factor value (see paragraph B)

HA: Hydrozone area (square feet)

CF: Conversion factor value of 0.62 (Eto inches to gallons per square foot)

IE: Irrigation efficiency value

B. Plant factor values shall be as follows, but may be adjusted pursuant to subsection C:

1. 0 to 0.3 for low water use plants,
2. 0.4 to 0.6 for average water use plants, and
3. 0.7 to 1.0 for high water use plants.

C. For each hydrozone, plant factor values may be determined and adjusted by the designer (based on professional judgment and applicable reference materials) considering the relevant factors such as:

1. Water requirements of the various plant species proposed,
2. Density of the plantings,
3. Microclimate of the site, and
4. Soil conditions. (Ord. 11210 § 16, 1994).

21A.16.330 Water use - Irrigation efficiency goals and system design standards. For purposes of this section, irrigation shall include any means of applying water to landscaped areas. All irrigation is at the applicant's option. Manually applied irrigation methods shall comply with subsections A and B. Irrigation applied through installed irrigation systems shall comply with subsections A through C:

A. Irrigation water shall be applied with goals of avoiding runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, and impervious surfaces by:

1. Considering soil type and infiltration rates,
2. Using proper irrigation equipment and schedules, including features such as repeat cycles, to closely match application rates with infiltration rates, and
3. Considering special problems posed by irrigation on slopes and in median strips.

B. All irrigation water outlets, except those using alternative water sources, shall be downstream of the meter used to measure irrigation water use.

C. Irrigation systems shall be subject to the following additional provisions:

1. Systems shall not be located on any:

- a. turfgrass slopes exceeding a slope of three horizontal feet to one vertical foot (3:1), and
 - b. turfgrass portions of median strips.
2. Systems in landscape strips less than five feet in width shall be designed to ensure that overspray and/or runoff does not occur by use of system design options such as low volume emitters.
 3. Systems shall be designed to be consistent with the requirements of the hydrozone in which they are located.
 4. Systems shall be designed with the minimum average irrigation efficiency of 0.625.
 5. The use of automatic shutoff or override capabilities using rain shutoffs or moisture sensors is encouraged.
 6. Systems shall utilize a master control valve connected to an automatic controller.
 7. Systems shall make provisions for winterization either by providing:
 - a. manual drains (automatic drain valves are not permitted at all low points), or
 - b. means to blow out lines with pressurized air.
 8. Separate valves shall be used to irrigate plants with differing water needs.
 9. Sprinkler heads with consistent application rates shall be selected for proper area coverage, operating pressure, and adjustment capability. (Ord. 11210 § 17, 1994).

21A.16.340 Water use - Irrigation system design, design review and audit at installation. A. Irrigation plan design shall be certified by an Irrigation Association (IA)-certified designer or a registered landscape architect or professional engineer with irrigation design experience.

B. The irrigation system must be audited and accepted at installation by an IA-certified irrigation auditor. (Ord. 11210 § 18, 1994).

21A.16.350 Water use - Irrigation design plan contents. Proposed irrigation system design plans shall be drawn on the same base project map as the landscape plan and shall identify:

- A. Location and size of any proposed separate water meters for the landscape;
 - B. Location, type, and size of all components of the irrigation system;
 - C. Static water pressure at the point of connection to the water supply;
- and
- D. Flow rate (gallons per minute), application rates (inches per hour), and design operating pressure (PSI) for each station. (Ord. 11210 § 19, 1994).

21A.16.360 Water use - Irrigation schedules. Irrigation schedules consistent with the following shall be submitted:

A. A recommended irrigation program with monthly irrigation schedules based, at a minimum on average monthly Eto, shall be required for before and after establishment.

B. The irrigation schedule shall:

1. Include for each station the run time (in minutes per cycle) and cycles per week,
2. Indicate the amount of applied water (in the applicable billing unit used by a purveyor),

3. Incorporate use of evapotranspiration data reflecting local microclimates,
4. Be adjusted for additional water need in recreational areas,
5. Incorporate additional operating criteria such as avoiding irrigation at times of high temperatures or winds. (Ord. 11210 § 20, 1994).

21A.16.370 Water use - Irrigation system maintenance. Irrigation systems shall be maintained and inspected periodically to assure proper functioning. Replacement of components shall be of originally specified parts or materials, or their equivalents. (Ord. 11210 § 21, 1994).